

Notes on the Parasites of *Acaudaleyrodes citri* (Priesner & Hosni) (Hem.: Aleyrodidae) in Israel

by

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The citrus black aleyrodid, *Acaudaleyrodes citri* (Priesner & Hosni), is a minor pest of citrus, endemic to Egypt and Israel. The species, first described by PRIESNER & HOSNI (4) under *Alenrotrachelus* Quaintance & Baker, was recently transferred by RUSSELL (5) to *Acaudaleyrodes* Takahashi. It was recorded in Egypt on *Citrus* spp., *Dodonaea viscosa* L., *Lawsonia inermis* L., *Psidium guajava* L., *Punica granatum* L., and *Zizyphus spina-Christi* (L.) (4), in Israel on *Citrus* spp., *Punica granatum* L., *Zizyphus* and *Morus* spp. (1, 2).

As a pest of citrus, *A. citri* was reported to be rather widespread in Egypt, being, however, rare and of no economic importance in Middle and Lower Egypt. A few cases of severe attack, causing leaf drop, were recorded in neglected citrus groves in Upper Egypt (4). Small numbers of this aleyrodid were observed on a few occasions, infesting orange leaves in Israel; no damage was recorded (2).

An *Eretmocerus* sp. (Hym.: Aphelinidae) was recorded by PRIESNER & HOSNI (4) as an insignificant parasite of the citrus black aleyrodid in Egypt. No other natural enemies of this pest have hitherto been recorded.

Very light infestations of the citrus black aleyrodid were observed by the present writer in several orange groves along the coastal plain of Israel. Populations of the pest were always extremely sparse, a low percentage of older orange leaves bearing one or two pupal cases, usually on the lower surface of the leaf. Samples of the pest were collected in several orange groves along the coastal plain (Sa'ad, Rehovot, Hadera) and kept in the laboratory for parasite emergence. Two species of parasitic Hymenoptera were obtained from these samples: *Eretmocerus diversiciliatus* Silvestri and *Prospaltella lutea* Masi (Chalcidoidea: Aphelinidae). Both are new to the fauna of Israel.

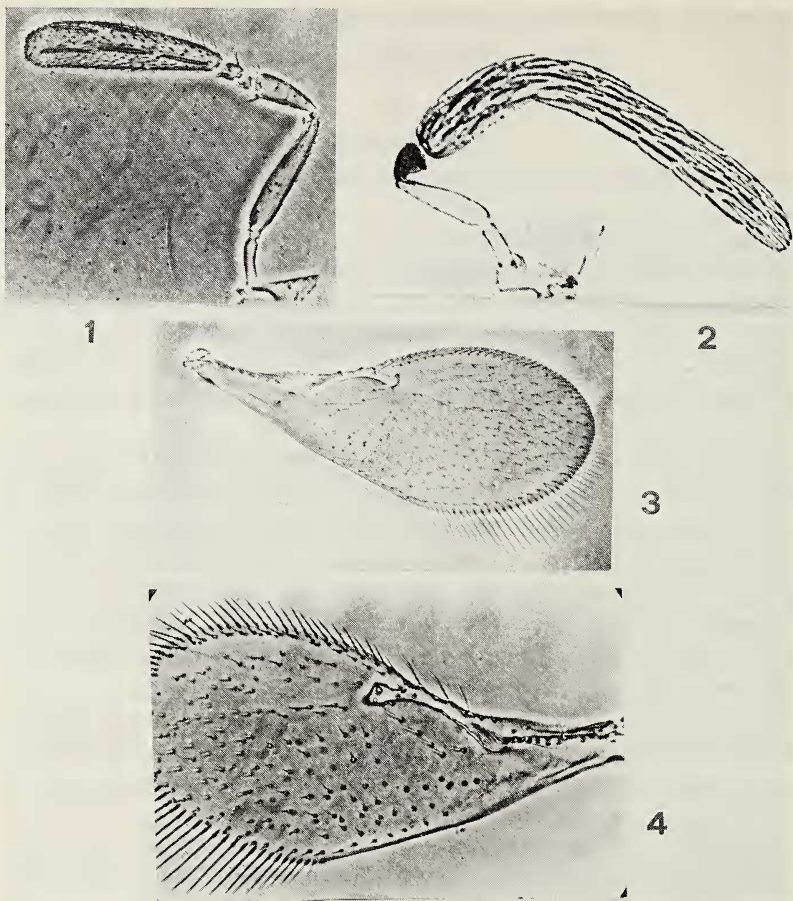
Eretmocerus diversiciliatus Silvestri

Figs. 1—4

Eretmocerus diversiciliatus Silvestri, 1914, *Bol. Lab. Zool. Portici* 9 : 366—367

DISTINGUISHING CHARACTERS

Female: Entirely yellow, mandibles brown, tarsi slightly dusky; wings entirely hyaline, venation yellowish. Antenna (Fig. 1) 5-segmented; radicle elongated, slightly shorter than half length of scape (2 : 5); scape 5 times as long as wide, longer than pedicel and funicle combined (25 : 19), much shorter than club (10 : 17); pedicel 2.3 times as long as wide, twice as long as funicle; first funicular segment minute, triangular, second segment larger, slightly wider than long (7 : 6); club spatulate, 4.1 times as long as wide. Praescutum wider than



Figures 1—4. *Eretmocerus diversiciliatus* Silvestri. 1. Antenna, ♀; 2. Antenna, ♂; 3. Fore wing, ♀; 4. Fore wing, ♂.

long (64 : 47), much longer than scutellum (47 : 30); scutellum much wider than long (28 : 15); metanotum and propodeum very narrow. Fore wing (Fig. 3, see also Fig. 4) entirely hyaline; submarginal vein twice as long as marginal, bearing 10 tubercles; marginal vein longer than stigmal (25 : 17), bearing 2 prominent setae on anterior margin; marginal fringe shorter than one-third width of disc. Abdomen longer than thorax; ovipositor not markedly exerted, somewhat longer than half length of abdomen. Length 0.56 mm.

Male: Differing from female in coloration and in structure of antenna and abdomen. Head and scape yellow, pedicel and club dusky; thorax ochreous, praescutum and scutellum with black reticulation; metanotum and propodeum dusky; abdomen brownish yellow, darkly reticulated; wings hyaline, venation blackish. Antenna (Fig. 2) 3-segmented; radicle elongated, slightly shorter than half length of scape (3 : 7); scape 3.5 times as long as wide, much shorter than enormous club; pedicel triangular, slightly longer than wide (13 : 12); club 6.8 times as

long as wide, bearing about 75 longitudinal sensillae. Abdomen longer than thorax; genitalia without parameres; digital sclerites long, bearing a single claw. Length 0.50 mm.

This species was described as a parasite of aleyrodids in southern Africa. It is the most abundant parasite of the citrus black aleyrodid in Israel.

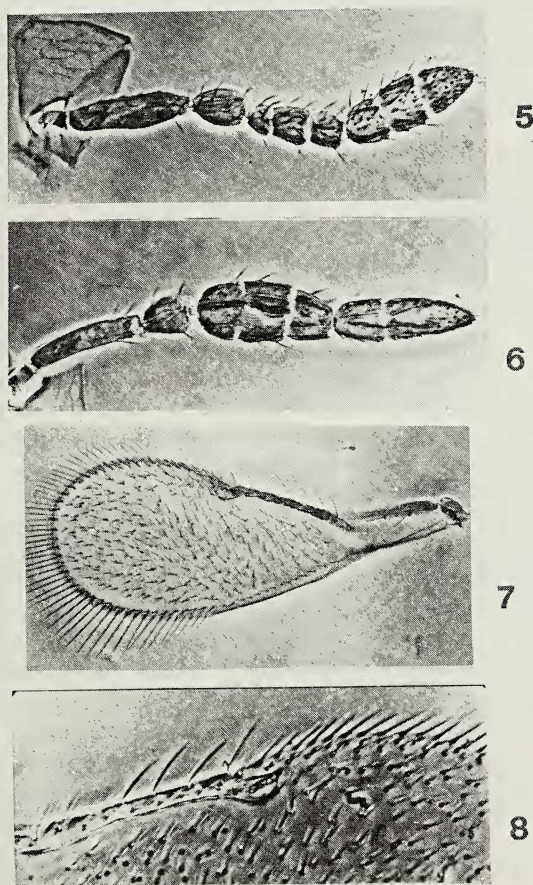
Prospaltella lutea Masi

Figs. 5—8

Prospaltella lutea Masi, 1910, *Bol. Lab. Zool. Portici* 4 : 25.

DISTINGUISHING CHARACTERS

F e m a l e: General colour golden yellow; scutellum light lemon yellow, anterior margin of praescutum brown, base of abdomen light brown, gonostyli dark brown; antennae and legs slightly dusky; wings hyaline, venation brownish. Antenna (Fig. 5) 8-segmented, distinctly clavate; radicle short, scape 4 times as long as



Figures 5—8. *Prospaltella lutea* Masi. 5. Antenna, ♀; 6. Antenna, ♂; 7. Fore wing, ♀; 8. Venation of fore wing, ♀.

wide, longer than funicle (31 : 25), shorter than club (31 : 36); pedicel about 1.5 times as long as wide (14 : 9), twice as long as first segment of funicle; funicular segments gradually widening; first segment the smallest, trapezoidal, as long as wide, not bearing sensilla; second segment longer (17 : 14), quadrate, as long as wide, bearing a single sensillum; third segment slightly shorter than second (16 : 17), slightly wider than long (17 : 16), bearing a single sensillum; club 3-segmented, wider than funicle (24 : 17), bearing 2—3 sensilla on each segment. Praescutum much wider than long (27 : 16), longer than scutellum (16 : 13); scutellum almost twice as wide as long (24 : 13). Fore wing (Fig. 7) hyaline; submarginal vein slightly shorter than marginal (15 : 16), bearing 2 subequal setae and 12—14 tubercles; anterior margin of stigmal vein (Fig. 8) parallel to anterior margin of wing; posterior margin of stigmal vein forming an obtuse, rounded angle with posterior margin of marginal vein; marginal fringe as long as one third width of disc. Abdomen much narrower (15 : 23), slightly longer (35 : 32) than thorax; ovipositor not markedly exerted, longer than half length of abdomen (7 : 12), slightly longer than mid tibia (29 : 26). Length 0.55—0.65 mm.

Male: Differing from female in coloration and in structure of antenna and abdomen. Head lemon-yellow, a light brown area around foramen; scape and pedicel pale, flagellum brown; pronotum brown; praescutum, except the sides and posteriorly, light brown; lateral and posterior sides of praescutum, and scapulae, yellow; scutellum and metanotum light lemon-yellow; axillae, propleura, mesopleura, propodeum and abdomen dark brown. Antenna (Fig. 6) 7-segmented; radicle short, scape slightly more than 4 times as long as wide (30 : 7), somewhat shorter than funicle (15 : 17); pedicel slightly longer than wide (5 : 4), somewhat longer than first funicular segment (25 : 22); funicle compact, wider than club (5 : 4) and slightly shorter (34 : 35); first funicular segment the shortest, wider than long (13 : 10); second segment larger, still wider than long (30 : 23); third segment somewhat shorter than second (22 : 23), almost as long as wide (22 : 23); club 2-segmented, second segment much longer than first (9 : 5), more than twice as long as wide (45 : 22). Abdomen slightly longer than thorax; genitalia without parameres; digital sclerites long. Length 0.50 mm.

This species was described as a parasite of aleyrodids in southwestern Europe. It is a frequent parasite of the citrus black aleyrodid in Israel, although less abundant than *E. diversiciliatus*.

Both species of parasites are rather abundant, and were obtained in relatively large numbers even from extremely sparse populations of their host, a fact attesting to their high efficiency. Species of *Eretmocerus* have long been known as very efficient parasites of aleyrodid pests (3). It seems most probable that the general scarcity and insignificance of *Acaudaleyrododes citri* in Israel is attributable to the efficient action of *Eretmocerus diversiciliatus* and *Prosopaltella lutea*.

ACKNOWLEDGEMENTS

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verifying the determination of aphelinid specimens. Thanks are likewise due to Professor Z. AVIDOV and to Dr. I. HARPAZ, Rehovot, for critical reading of the manuscript and for many helpful suggestions.

References

- (1) AVIDOV, Z., 1961, Pests of the cultivated plants of Israel. The Magnes Press, Jerusalem, 546 pp. (in Hebrew).
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- (5) RUSSELL, L. M., 1962, New name combinations and notes on some African and Asian species of Aleyrodidae (Homoptera). *Bul. Brooklyn Entomol. Soc.* 57 : 63—65.

Nieuwe literatuur over schildluizen (1960—65)*)

BORCHSENIUS, N. S., 1960, Fauna USSR, Homoptera VIII, Zoöl. Inst. Akad. v. Wet. USSR, n.s. No. 77. Moskou-Leningrad. Dit deel behandelt de Kermococcidae, Asterolecaniidae, Lecaniodiaspididae en Aclerdidae. Het bevat 282 blz., 203 fig., en beschrijft (in het Russisch) 100 soorten (29 nieuw) en 22 geslachten (3 nieuw).

—————, 1963, Praktisch determinatieboek voor de schadelijke schildluizen van gekweekte planten en bomen in de USSR. Uitgave Zoöl. Inst. Akad. v. Wet. USSR. Dit keurig uitgevoerde boekje bevat 311 blz. en 247 goede habitusfiguren. Blijkbaar is het boekje bedoeld voor de praktijk van land-, tuin- en bosbouw. Het bevat 10 eenvoudige determinatietabellen voor de beschadigers van verschillende waardplanten (bv. wijnstok, groenten, kas- en kamerplanten). De figuren met de Latijnse namen zijn ook bruikbaar voor hen, die de Russische tekst niet verstaan.

BORCHSENIUS, en ook WILLIAMS, hebben van 1960—1965 nog vele kleinere artikelen gepubliceerd, die in het bestek van dit artikel niet genoemd kunnen worden. Men zie daarvoor het supplement op de bibliografie van MORRISON, en het Zoological Record.

JAKUBSKI, A. W., 1965, A critical revision of the families Margarodidae and Termitococcidae. Deze uitgave van het British Museum (Nat. Hist.) bevat 191 blz. en 15 platen. JAKUBSKI heeft destijds het Poolse grein, *Porphyrophora polonica* (Linn.), zeer uitvoerig bestudeerd, en wilde een groot werk in 4 delen over de Margarodidae uitgeven. Deel I is in 1934 in het Pools verschenen. Deel II was in 1944 reeds gedrukt, maar werd door oorlogsgeweld vernietigd, evenals het MS. en de aantekeningen voor deel III en IV. JAKUBSKI zelf kwam in het concentratiekamp Auschwitz (en later Mauthausen) terecht, waarin hij 4½ jaar bleef. In 1948 kwam hij bij het Brits Museum (Nat. Hist.), waar hij 9 jaar doorbracht om zijn verloren werk te reconstrueren, hoewel zijn gezondheid geknakt was. In 1957 ging hij naar een Poolse nederzetting in Wales, waar hij in 1962 gestorven is.

JAKUBSKI'S MS. van ongeveer 1200 blz. kwam in het bezit van het Brits Museum (Nat. Hist.). Dr. W. E. CHINA heeft daaruit een uittreksel gemaakt, met behoud van het wezenlijke deel der diagnosen; de zeer lange lijsten met literatuur, namen en synoniemen, vindplaatsen, waardplanten, en wat verder gemist kon worden, zijn weggelaten. Deze bewerking is thans gedrukt. Dr. CHINA heeft ook een copie gemaakt van een plaat in de verhandeling

*) Vergl. vorige boekbesprekingen in *Ent. Ber.* 13 : 190, 333, 15 : 231, 17 : 40 en 20 : 19.